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| 09/988,066 | 11/16/2001 | Ronak Patel | FOUND-0009 | 7739 |

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| EXAMINER |
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MEW, KEVIN D

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| ART UNIT | PAPER NUMBER |
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2616

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/06/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 09/988,066 | | PATEL ET AL. | |
| | Examiner | | Art Unit | |
| | Kevin Mew | | 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/28/06, 1/19/07</u> | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed 1/19/2007 have been considered. Claims 1-12 are currently pending.

Specification

2. The abstract of the disclosure is objected to because the title of the instant application should not be included in the abstract page. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-4, 6, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Dittia et al. (USP 6,654,342).

Regarding claim 1, Dittia discloses an administrative module (cell unstriper and memory controller, col. 5, lines 10-41) for use in a digital switch, wherein the digital switch (switching system, Fig. 1A) includes a plurality of blades (line cards 101, Fig. 1A) coupled to a switching fabric (switch fabric 110, Fig. 1A), and wherein each blade outputs serial data streams (each line card outputs data packets, col. 4, lines 36-51 and Fig. 1A) with in-band control information in multiple stripes (with flow control information, col. 8, lines 3-22) to said switching fabric (switch fabric 110, Fig. 1A), said administrative module comprising:

a level monitor (flow control information indication) at a receiving blade (at a line card) that monitors levels of the data received and stored at a receiving blade (that monitors the flow of data received and stored at the line card, col. 4, lines 36-51).

a stripe synchronization error detector (a data structure) that detects a stripe synchronization error (detects congested flow condition) based on the amount of data monitored (based on the flow control information indicated, col. 4, lines 36-51).

Regarding claim 3, Dittia discloses the administrative module of claim 1, further comprising:

a flow controller (control logic) that initiates a recovery routine to re-synchronize data across the stripes in response to detection of a stripe synchronization error (control logic holds its queue data being transmitted to the congested port, col. 4, lines 36-51).

Regarding claim 4, Dittia discloses the administrative module of claim 3, wherein said recovery routine includes throttling back the data flowing to one or more of said stripes (throttle-back its data in a queue for each destination to which it is sending, col. 4, lines 36-51).

Regarding claim 6, Dittia discloses the administrative module of claim 1, wherein said stripe-synchronization error detector detects a stripe synchronization error in response to any one or more of the following error conditions: an incoming link error, a cross-point failure, and an outgoing link error (outgoing error to a congested port, col. 4, lines 36-51).

Regarding claim 11, Dittia discloses a method for managing out-of-synchronization traffic flow through a cross-point switch in a switching fabric, comprising:

(a) monitoring the level of stripe receive synchronization queues (monitoring the flow control information for data received and stored in the data queues of the line card, col. 4, lines 36-51);

(b) determining whether an out-of-synchronization condition exists (detecting a congested flow condition based on the flow control information indicated, col. 4, lines 36-51), the stripe receive synchronization queues storing data that passed through the switching fabric (queues of the line card storing data from the switch fabric, col. 4, lines 36-51); and

(c) initiating a re-synchronization routine when said out-of-synchronization condition exists (throttle-back its data in a queue for each destination to which it is sending when a congested condition exists, col. 4, lines 36-51).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia Jr et al. in view of Ohira et al. (USP 6,721,268).

Regarding claim 5, Dittia discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the administrative module of claim 1, further comprising:

a control character presence tracker that identifies the presence of a K2 character during the recovery routine.

However, Ohira discloses a ring-shaped multiplexed network wherein APS K2 bytes are included in the SONET frame transport overhead (col. 6, lines 29-40 and Fig. 1).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Ohira in using APS K2 bytes in the SONET frame transport overhead.

The motivation to do so is to provide automatic protection switching signaling and alarm transport until the transmission path recovers from the fault.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia et al. (USP 6,654,342) in view of Bianchini, Jr. et al. (USP 6,473,433).

Regarding claim 2, Dittia discloses the administrative module of claim 1, wherein:

said level monitor (flow control information indication) at a receiving blade (at a line card) monitors the levels of the data stored in each data structure of the receiving blade (that monitors the flow control information stored in the queues of the line card, col. 4, lines 36-51);

said stripe synchronization error detector (a data structure) detects at least one of an overflow and underflow condition (detects congested/overflow condition) in the amount of data received on a respective stripe from a particular source (based on the flow control information received from another line card, col. 3, lines 34-39, col. 4, lines 36-51).

Dittia does not explicitly show the data received at a receiving blade is sorted based on stripe and source information and stored in a set of data structures.

However, Bianchini discloses data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory (col. 17, lines 14-24)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the data received at a receiving blade is sorted based on stripe and source information and stored in a set of data structures.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 7, Dittia discloses a method for detecting stripe synchronization error in a network switch, comprising:

(b) storing the sorted data in a set of data structures at the receiving blade (stored in queues at the receiving line card, col. 4, lines 36-51);

(c) monitoring the levels of data stored in each said data structure (monitors the flow control information stored in the queues of the line card, col. 4, lines 36-51); and

(d) detecting at least one of an overflow and underflow condition (detects congested/overflow condition) in the amount of data received on a respective stripe from a particular source (based on the flow control information received from another line card, col. 3, lines 34-39, col. 4, lines 36-51).

Dittia does not explicitly show (a) sorting data received at a receiving slot based on stripe and source information.

However, Bianchini discloses data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory (col. 17, lines 14-24)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the modified system of Dittia will show (a) sorting data received at a receiving slot based on stripe and source information.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 8, Dittia and Bianchini disclose all the aspects of claim 7 above. Dittia does not explicitly show the method of claim 7, wherein the source information identifies a slot that sent the data across a switching fabric of the network switch.

However, Bianchini discloses the source information contains a blade/channel ID (identifies a slot) that identifies the blade the sends data across the switching fabric (col. 17, lines 14-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored

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in queues of shared memory such that the modified system of Dittia will show the source information identifies a slot that sent the data across a switching fabric of the network switch.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 9, Dittia and Bianchini disclose all the aspects of claim 7 above. Dittia does not explicitly show the method of claim 7, wherein the source information identifies a source packet processor that sent the data from a slot across a switching fabric of the network switch.

However, Bianchini discloses the source information contains a blade/channel ID (identifies a slot) that identifies the blade the sends data across the switching fabric (col. 17, lines 14-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the modified system of Dittia will show the source information identifies a source packet processor (a line card/blade) that sent the data from a slot (a channel) across a switching fabric of the network switch.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Allowable Subject Matter

6. Claim 10 is allowed.

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 10, a method for maintaining synchronization of striped cell traffic, comprising the steps of:

(a) sending a common character in striped cells in all lanes for a predetermined number of cycles;

(c) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared.

In claim 12, the method of claim 11, further comprising, after said initiating step (c), the steps of:

(a) sending a common character in striped cells in all lanes for a predetermined number of cycles;

(c) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared.

Response to Arguments

7. Applicant's arguments with respect to claims 1-9, 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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